

What is claimed is:

1. A method of manufacturing a semiconductor device, comprising the steps of:
forming a gate electrode over a substrate;
introducing ions into the substrate to form source/drain regions in the substrate proximate to the
gate electrode;

5 activating a portion of the source/drain regions by laser thermal annealing using a laser;
moving the laser and the substrate relative to one another; and
activating another portion of the source/drain regions by laser thermal annealing using the laser,
wherein the movement of the laser and the substrate relative to one another is continuous between
and during the steps of activating the portion of the source/drain regions and activating the other portion
10 of the source/drain regions.

2. The invention according to claim 1, wherein each portion of the source/drain regions receives
no more than one single pulse of energy from the laser.

3. The invention according to claim 1, wherein each portion of the source/drain regions receives
more than one single pulse of energy from the laser.

4. The invention according to claim 1, wherein each pulse from the laser respectively irradiates
non-identical portions of the source/drain regions.

5. The invention according to claim 1, wherein a spot area of the laser on the substrate is less
than 50 millimeters².

6. A method of manufacturing a semiconductor device, comprising the steps of:
forming a gate electrode over a substrate;
introducing ions into the substrate to form source/drain regions in the substrate proximate to the
gate electrode;

5 activating a portion of the source/drain regions by laser thermal annealing using a laser;
moving the laser and the substrate relative to one another; and
activating another portion of the source/drain regions by laser thermal annealing using the laser,

wherein a spot area of the laser on the substrate is less than 50 millimeters².

7. The invention according to claim 6, wherein each portion of the source/drain regions receives no more than one single pulse of energy from the laser.

8. The invention according to claim 6, wherein each portion of the source/drain regions receives more than one single pulse of energy from the laser.

9. The invention according to claim 8, wherein each pulse from the laser respectively irradiates non-identical portions of the source/drain regions.

10. The invention according to claim 6, wherein the laser and the substrate move relative to one another at a constant velocity.

11. A method of manufacturing a semiconductor device, comprising the steps of:

forming a gate electrode over a substrate;

introducing ions into the substrate to form source/drain regions in the substrate proximate to the gate electrode;

activating a portion of the source/drain regions by laser thermal annealing using a pulse of laser energy from a laser;

moving the laser and the substrate relative to one another; and

activating another portion of the source/drain regions by laser thermal annealing using another pulse of laser energy from the laser,

wherein the laser and the substrate move after each pulse of laser energy and each portion of the source/drain regions receives more than one single pulse of energy from the laser.

12. The invention according to claim 11, wherein each pulse from the laser respectively irradiates non-identical portions of the source/drain regions.

13. The invention according to claim 11, wherein a spot area of the laser on the substrate is less than 50 millimeters².

14. The invention according to claim 11, wherein the laser and the substrate move relative to one another at a constant velocity.

14. The invention according to claim 11, wherein the laser and the substrate move relative to one another at a constant velocity.